

# Cal/EPA



## Department of Pesticide Regulation

### Worker Health and Safety

# Hazard Recognition

## Pesticides

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Worker Health and Safety Branch  
Industrial Hygiene Program

# Hazard Recognition

What is it?

*Classification or Identification*

**CHEMICAL**

**BIOLOGICAL**

**PHYSICAL AGENTS**

# Hazard Recognition

How is it done for Pesticides?

**Primary Source: The LABEL**

## **Alternative Sources**

 MSDS

 Reference Texts

 PEL, TLV, NIOSH Pocket Guide



# Hazard Recognition

## What is a Pesticide?

### FIFRA (40 CFR 162.3)

“(1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest [insect, rodent, nematode, fungus, weed, other forms of terrestrial or aquatic plant or animal life or viruses, bacteria, or other microorganisms, except viruses, bacteria, or other microorganisms on or in living man or other animals, which the Administrator declares to be a pest], and (2) any substance or mixture of substances intended for use as a plant regulator,

# Hazard Recognition

## What is Special about Pesticides?

**Pesticides are a class of hazardous chemicals that are released into the environment in a controlled fashion to accomplish their particular function.**

**They are also one of the few materials that are intentionally added to our food supply.**

**They are also designed with lethality in mind.**

# Hazard Recognition

## Factors to Consider

Classification

Use Category

Nomenclature

Formulation

Label Information

Physical/Chemical Properties

# Hazard Recognition Classification

## *Type*

Acaricide  
Algaecide  
Attractant  
Avicide  
Bactericide  
Defoliant  
Dessiccant

## *Target*

Mites & Ticks  
Algae  
Various  
Birds  
Bacteria  
Leaf Structure  
Plants

# Hazard Recognition Classification

## *Type*

Disinfectant

Fungicide

IGR & PGR

Herbicide

Insecticide

Miticide

Molluscicide

## *Target*

Bacteria

Fungus

Insects or Plants

Plants

Insects

Mites & Ticks

Snail & Slugs

# Hazard Recognition Classification

## *Type*

Nematicide

Piscicide

Predacide

Repellant

Rodenticide

Silvicide

## *Target*

Nematodes

Fish

Large Vertebrates

Various

Rodents

Woody Plants

# Hazard Recognition

## Use Category

***General Use*** 

Over the counter available for untrained users.

***Restricted Use*** 

Only available for use by certified applicators.



# Hazard Recognition Nomenclature

## ***Active Ingredient (A.I.)***

The material that does the claimed activity

## ***Inert Ingredients***

Everything else.



# Hazard Recognition

## Nomenclature

**Proprietary/Trade Name**

*Roundup, Dursban, Poast*

**Common Name**

*Glyphosate, chlorpyrifos, sethoxydim*

**IUPAC Name**

*2,4-bicyclo-cis-methyl-yabba-dabba-  
4,5-trans-hideehoic acid*

# Hazard Recognition Formulations

## Technical Grade

*Usually what the formulator starts with,  
the “**pure stuff**”.*

## Formulation

*The mixture (active & inerts) offered for  
sale/use.*

# Hazard Recognition Formulations

**Most “finished” tank mixes are  
primarily**

**WATER**

# Hazard Recognition

## Formulations

### “INERTS”

*Inert ingredients are mixed with the active ingredients. Inerts include carriers, solvents, diluents, surfactants, adjuvants\*, emulsifying agents, odour masks, stabilizers etc.*

*They are **not** necessarily physically, biologically or chemically inert*

# Hazard Recognition

## Formulations

**Aerosols:** *Liquid A.I. in a compatible solvent*

**Bait:** *A.I. mixed with an attractant*

**Dust:** *A.I. in/on a fine dry particulate.*

**Emulsifiable Concentrate:** *A.I. mixed with emulsifier in an organic solvent.*

# Hazard Recognition Formulations

**Flowable:** *A.I. in a “batter” that can form aqueous suspensions.*

**Granular:** *A.I. in/on large dry particulate.*

**Microencapsulated:** *A.I. embedded in microcapsules, released by diffusion.*

# Hazard Recognition

## Formulations

**Slow Release:** *A.I. embedded in matrix, released by diffusion/surface contact.*

**Soluble Powder:** *A.I. powder that is water soluble.*

**ULV:** *A.I. undiluted, 2 liter or less per acre.*

**Wettable Powder:** *A.I. finely ground, will stay in suspension with agitation.*



# Hazard Recognition

## Label Information

**Labels provide essential safety information. All USEPA approved labels must provide a minimum set of specific information.**



# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

# DIRECTIONS FOR USE

# NAME OF PRODUCT

# INGREDIENT STATEMENT

2

9

5

8

**DIRECTIONS:** Spray thoroughly on infested plant parts. Repeat as necessary. Can be used up to 3 days of harvest on food crops, unless otherwise specified.

**HOUSEHOLD PESTS** (Roaches, Ants, Fleas): 2 Tablespoons per gallon water. Spray on areas frequented by insects. Avoid contamination of food, clothes, utensils and water. Repeat as necessary. Do not use in food preparation areas or in edible product areas of food processing plants.

**VEGETABLES:** Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans within 1 day of harvest. Do not apply to Broccoli and peas within 3 days of harvest and to brussels sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

## RE-ENTRY STATEMENT

Do not enter treated areas for 24 hours unless appropriate protective clothing is worn. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons. Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written or oral warnings must include the following information:

## DANGER

(Insert area or field description) treated with Transzapon on (insert date of application). Do not enter without appropriate protective clothing for 24 hours, in case of accidental exposure. Call a doctor (physician, clinic or hospital) immediately. Explain that the victim has been exposed to Transzapon and describe his location. For further information see the STATEMENT OF PRACTICAL TREATMENT portion of the pesticide label.

**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
BEAVERTON, MD 54321

## PRECAUTIONARY STATEMENTS

**CAUTION:** Harmful if swallowed. Do not breathe vapor or spray mist. Avoid contact with skin; wash skin and hands thoroughly after using. Avoid contamination of food. Transzapon is a cholinesterase inhibitor and can cause symptoms similar to those caused by other organic phosphorus compounds.

If poisoning should occur, CALL A PHYSICIAN IMMEDIATELY. Note to Physicians: Emergency Information call (212) 456-7890.

ATROPINE IS AN ANTIDOTE.  
KEEP AWAY FROM DOMESTIC ANIMALS AND FOODSTUFFS.  
NOT FOR STORAGE IN OR AROUND THE HOME.

DO NOT USE, POUR, SPILL OR STORE NEAR AN OPEN FLAME.  
DO NOT STORE BELOW 25 DEGREES F.  
PROTECT FROM HEAT.  
COMBUSTIBLE! KEEP AWAY FROM HEAT AND OPEN FLAME.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store in a cool, dry area.  
**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal or reuse of pesticide spray material or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Product #2222  
EPA Reg. No. 0093  
EPA Est. 111-22-3

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

# ZAPPO

## TRANZIAPON INSECT SPRAY

## KILLS INSECTS:

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND HOUSEHOLD PESTS



## ACTIVE INGREDIENTS BY WT.

Transzapon	49%
Aromatic Petroleum Derivative Solvent	34%
Inert Ingredients	17%
*3,3-Dimethoxy-4-methyl-5-nitrobenzophenone	

**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

3  
RE-ENTRY STATEMENT

4  
REGISTRATION AND ESTABLISHMENT NUMBERS

11  
NET CONTENTS

10  
NAME AND ADDRESS OF MANUFACTURER

6  
MISUSE STATEMENT

7  
CHILD HAZARD WARNING



# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

# DIRECTIONS FOR USE

# NAME OF PRODUCT

# INGREDIENT STATEMENT

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**VEGETABLES:** Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans within 1 day of harvest. Do not apply to Broccoli and peas within 3 days of harvest and to brussels sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

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**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
BEAVERTON, MD 54321

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DO NOT USE, POUR, SPILL OR STORE NEAR AN OPEN FLAME. DO NOT STORE BELOW 25 DEGREES F. PROTECT FROM HEAT. COMBUSTIBLE! KEEP AWAY FROM HEAT AND OPEN FLAME.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store in a cool, dry area. **PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal or release of pesticide spray residue or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to use instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Product #2222  
EPA Reg. No. 0093  
EPA Est. 111-22-3

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

# ZAPPO

## TRANZIAPON INSECT SPRAY

## KILLS INSECTS:

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND HOUSEHOLD PESTS



## ACTIVE INGREDIENTS BY WT.

Transzapon	49%
Aromatic Petroleum Derivative Solvent	34%
Inert Ingredients	17%
*3,3-Dimercaptide of cismercaptopyridine	

**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

# RE-ENTRY STATEMENT

# REGISTRATION AND ESTABLISHMENT NUMBERS

# NET CONTENTS

# NAME AND ADDRESS OF MANUFACTURER

# MISUSE STATEMENT

# CHILD HAZARD WARNING



# Hazard Recognition

Label Information: Signal Words

Category I: DANGER/**POISON**



**Very toxic material**

**POLD: Taste to a teaspoon**

**Possibly corrosive to eyes or skin**

**Usually Restricted Use**

# Hazard Recognition

## Label Information: Signal Words

**Category II: WARNING**

**Moderately toxic material**

**POLD: Teaspoon to ounce**

**Possibly severely irritating to eyes  
or skin**

# Hazard Recognition

## Label Information: Signal Words

**Category III: caution**

**“Slightly” toxic material**

**POLD: Greater than one ounce**

**Somewhat irritating to eyes**

**Slight irritation to skin**



# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

# DIRECTIONS FOR USE

# NAME OF PRODUCT

# INGREDIENT STATEMENT

2

9

5

8

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**VEGETABLES:** Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans within 1 day of harvest. Do not apply to Broccoli and peas within 3 days of harvest and to brussels sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

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## DANGER

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**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
BEAVERTON, MD 54321

## PRECAUTIONARY STATEMENTS

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DO NOT STORE BELOW 25 DEGREES F.  
PROTECT FROM HEAT.  
COMBUSTIBLE! KEEP AWAY FROM HEAT AND OPEN FLAME.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store in a cool, dry area.  
**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal or reuse of pesticide spray nozzles or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to use instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Product #2222  
EPA Reg. No. 0003  
EPA Est. 111-22-3

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

# ZAPPO

## TRANZIAPON INSECT SPRAY

## KILLS INSECTS:

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND HOUSEHOLD PESTS



## ACTIVE INGREDIENTS BY WT.

Transzapon	49%
Aromatic Petroleum Derivative Solvent	34%
Inert Ingredients	17%
*3,3-Dimercaptate of cismercaptosulfonate	

**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

3  
RE-ENTRY STATEMENT

4  
REGISTRATION AND ESTABLISHMENT NUMBERS

11  
NET CONTENTS

10  
NAME AND ADDRESS OF MANUFACTURER

6  
MISUSE STATEMENT

7  
CHILD HAZARD WARNING



# **Hazard Recognition**

## **Label: Precautionary Statement**

**Location of human hazard information and appropriate PPE to be worn when handling this material.**

**May also contain information on environmental hazards and specific physical and chemical hazards (fire, explosive, volatility, etc.)**



# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

## DIRECTIONS FOR USE

2

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**HOUSEHOLD PESTS** (Roaches, Ants, Fleas): 2 Tablespoons per gallon water. Spray on areas frequented by insects. Avoid contamination of food, dishes, utensils and water. Repeat as necessary. Do not use in food preparation areas or in edible product areas of food processing plants.

**VEGETABLES:** Broccoli, Brussel Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans and peas within 3 days of harvest and to brassica sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

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## ANGER

(Insert area or field description) treated with Transzapon on (insert date of application). Do not enter without appropriate protective clothing for 24 hours, in case of accidental exposure. Call a doctor (physician, clinic or hospital) immediately. Explain that the victim has been exposed to Transzapon and describe his condition. For further information see the STATEMENT OF PRACTICAL TREATMENT portion of the pesticide label.

**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
BEAVERTON, MD 54321

## PRECAUTIONARY STATEMENTS

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COMBUSTIBLE! KEEP AWAY FROM HEAT AND OPEN FLAME.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

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Product #2222  
EPA Reg. No. 0003  
EPA Est. 111-22-3

## NAME OF PRODUCT

9

# ZAPPO

## TRANZIAPON INSECT SPRAY

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

## KILLS INSECTS:

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND HOUSEHOLD PESTS



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Transzapon	49%
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NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

## RE-ENTRY STATEMENT

3

## REGISTRATION AND ESTABLISHMENT NUMBERS

4

## NAME AND ADDRESS OF MANUFACTURER

10

## MISUSE STATEMENT

6

## NET CONTENTS

11

## INGREDIENT STATEMENT

8

## CHILD HAZARD WARNING

7



# Hazard Recognition

Label: Identifiers

Trade Name

Common Name

IUPAC Name

***EPA Registration Number***

# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

# DIRECTIONS FOR USE

# NAME OF PRODUCT

# INGREDIENT STATEMENT

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EPA Est. 111-22-3

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

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Inert Ingredients	17%
*3,3-Dimethoxy-4-methyl-5-pyridyl phosphorothioate	

**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

# RE-ENTRY STATEMENT

# REGISTRATION AND ESTABLISHMENT NUMBERS

# NET CONTENTS

# NAME AND ADDRESS OF MANUFACTURER

# Storage and Disposal

# CHILD HAZARD WARNING



# **Hazard Recognition**

## **Label: Storage and Disposal**

**Information on proper storage (temperature extremes, not near food, feed or incompatibles) and disposal residue and used containers.**

**Spills in the field of application may be best left alone (prevent water/off-site contamination).**



**WARNING OR  
CAUTION  
STATEMENTS**

**DIRECTIONS  
FOR USE**

**DIRECTIONS:** Spray thoroughly on infested plant parts. Repeat as necessary. Can be used up to 3 days of harvest on food crops, unless otherwise specified.

**HOUSEHOLD PESTS** (Roaches, Ants, Fleas): 2 Tablespoons per gallon water. Spray on areas frequented by insects. Avoid contamination of food, clothes, utensils and water. Repeat as necessary. Do not use in food preparation areas or in edible product areas of food processing plants.

**VEGETABLES:** Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans within 1 day of harvest. Do not apply to Broccoli and peas within 3 days of harvest and to Brussels sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

**RE-ENTRY STATEMENT**

Do not enter treated areas for 24 hours unless appropriate protective clothing is worn. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written or oral warnings must include the following information:

**DANGER**

(Insert area or field description) treated with Transzapon on (insert date of application). Do not enter without appropriate protective clothing for 24 hours, in case of accidental exposure. Call a doctor (physician, clinic or hospital) immediately. Explain that the victim has been exposed to Transzapon and describe his location. For further information see the STATEMENT OF PRACTICAL TREATMENT portion of the pesticide label.

**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
BEAVERTON, MD 54321

**PRECAUTIONARY STATEMENTS**

**CAUTION:** Harmful if swallowed. Do not breathe vapor or spray mist. Avoid contact with skin; wash skin and hands thoroughly after using. Avoid contamination of food. Transzapon is a cholinesterase inhibitor and can cause symptoms similar to those caused by other organic phosphorus compounds.

If poisoning should occur, CALL A PHYSICIAN IMMEDIATELY. Note to Physicians: Emergency Information call (1-23) 456-7890.

ATROPINE IS AN ANTIDOTE.  
KEEP AWAY FROM DOMESTIC ANIMALS  
AND FOODSTUFFS.  
NOT FOR STORAGE IN OR AROUND  
THE HOME.

DO NOT USE, POUR, SPILL OR  
STORE NEAR AN OPEN FLAME.  
DO NOT STORE BELOW 25 DEGREES F.  
PROTECT FROM HEAT.  
COMBUSTIBLE! KEEP AWAY FROM  
HEAT AND OPEN FLAME.

This product is highly toxic to bees ex-  
posed to direct treatment or residues on  
crops. Protective information may be ob-  
tained from your Cooperative Agricultural  
Extension Service.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by stor-  
age or disposal.

**STORAGE:** Store in a cool, dry area.

**PESTICIDE DISPOSAL:** Pesticide wastes are  
toxic. Improper disposal or excess pesticide  
spray residue or residue is a violation of Federal  
Law. If these wastes cannot be disposed of by  
use according to label instructions, contact your  
State Pesticide or Environmental Control Agency,  
or the Hazardous Waste representative at the  
nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse. Then offer  
for recycling or reconditioning, or puncture and  
dispose of in a sanitary landfill, or by other pro-  
cedures approved by state and local authorities.

**DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product  
in a manner inconsistent with its labeling.

Product #2222  
EPA Reg. No. 0003  
EPA Est. 111-22-3

**NAME OF  
PRODUCT**

**TYPE OF  
FORMULATION**

**INGREDIENT  
STATEMENT**

MAKES UP TO  
**24 GALLONS**  
DILUTED SPRAY

**ZAPPO**  
**TRANZIAPON INSECT SPRAY**

**KILLS INSECTS:**

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND  
HOUSEHOLD PESTS

**ACTIVE INGREDIENTS  
BY WT.**

Transzapon® ..... 49%  
Aromatic Petroleum  
Derivative Solvent ..... 34%  
Inert  
Ingredients ..... 17%  
\*3,3 Dimercaptate of cismer-  
capto ponticase



**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

**NET CONTENTS 8 FL. OZ.**  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

**3**  
**RE-ENTRY  
STATEMENT**

**4**  
**REGISTRATION AND  
ESTABLISHMENT  
NUMBERS**

**10**  
**NAME AND  
ADDRESS OF  
MANUFACTURER**

**6**  
**MISUSE  
STATEMENT**

**11**  
**NET  
CONTENTS**

**7**  
**CHILD  
HAZARD  
WARNING**

# **Hazard Recognition**

## **Label: Contents/Formulation**

**How much does the container hold?**

**What are its physical characteristics?**

**What percentage A.I.? Inerts?**



# WARNING OR CAUTION STATEMENTS

# TYPE OF FORMULATION

## DIRECTIONS FOR USE

2

**DIRECTIONS:** Spray thoroughly on infested plant parts. Repeat as necessary. Can be used up to 3 days of harvest on food crops, unless otherwise specified.

**HOUSEHOLD PESTS** (Roaches, Ants, Fleas): 2 Tablespoons per gallon water. Spray on areas frequented by insects. Avoid contamination of food, dishes, utensils and water. Repeat as necessary. Do not use in food preparation areas or in edible product areas of food processing plants.

**VEGETABLES:** Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Kale, Beans, Peas, Potatoes (aphids, scales, mites, mealybugs): 1 Tablespoon per gallon water. Do not apply to Beans within 1 day of harvest. Do not apply to Broccoli and peas within 3 days of harvest and to Brussels sprouts, cabbage, cauliflower or kale within 7 days of harvest. Use up to harvest on potatoes.

## RE-ENTRY STATEMENT

Do not enter treated areas for 24 hours unless appropriate protective clothing is worn. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written or oral warnings must include the following information:

## 1 DANGER

(Insert area or field description treated with Transzapon on (insert date of application). Do not enter without appropriate protective clothing for 24 hours, in case of accidental exposure. Call a doctor (physician, clinic or hospital) immediately. Explain that the victim has been exposed to Transzapon and describe his condition. For further information see the STATEMENT OF PRACTICAL TREATMENT portion of the pesticide label.

**CHEMICO CHEMICAL COMPANY**  
10000 MAIN STREET  
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DO NOT STORE BELOW 25 DEGREES F.  
PROTECT FROM HEAT.  
COMBUSTIBLE! KEEP AWAY FROM HEAT AND OPEN FLAME.

This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Agricultural Extension Service.

## STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

**STORAGE:** Store in a cool, dry area.  
**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal or release of pesticide spray residue or residue is a violation of Federal Law. If these wastes cannot be disposed of by use according to use instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Product #2222  
EPA Reg. No. 0093  
EPA Est. 111-22-3

## NAME OF PRODUCT

9

# ZAPPO

## TRANZIAPON INSECT SPRAY

MAKES UP TO  
24 GALLONS  
DILUTED SPRAY

## KILLS INSECTS:

- APHIDS
- RED SPIDER MITES
- FLIES
- MEALYBUGS
- SCALES AND HOUSEHOLD PESTS



## ACTIVE INGREDIENTS BY WT.

Transzapon	49%
Aromatic Petroleum Derivative Solvent	34%
Inert Ingredients	17%
*3,3-Dimercaptide of cismercaptopyridine	

**CAUTION: KEEP OUT OF REACH OF CHILDREN**  
See back panel for additional cautions.

NET CONTENTS 8 FL. OZ.  
CONTAINS 4.8 LBS. OF TRANZIAPON PER GALLON

## 3 RE-ENTRY STATEMENT

## 4 REGISTRATION AND ESTABLISHMENT NUMBERS

## 11 NET CONTENTS

## 10 NAME AND ADDRESS OF MANUFACTURER

## 6 MISUSE STATEMENT

## 7 CHILD HAZARD WARNING



# **Hazard Recognition**

## **Label: Directions/Re-Entry**

**Information for the mixer/loader, applicator, grower, farm workers and any other persons who may use or come in contact with the material and/or its residues.**

**Includes target pest, allowed crop uses, special restrictions, WPS information, reentry intervals, days to harvest, etc.**

# Hazard Recognition

## Chemical Hazard, Things to Consider

### **Toxicity:**

Acute/Subchronic/Chronic

Signs and Symptoms

AChE inhibiting (OP, Carbamates)

All other materials



# Hazard Recognition

## Chemical Hazard, Things to Consider

### **Route:**

#### **Agricultural:**

Dermal/Inhalation/Oral/Injection

#### **Non-Agricultural:**

Inhalation/Dermal/Oral/Injection

**Wakie-wakie. Time for a five minute break.**



Personal Protective  
Equipment (PPE) and  
Respiratory Protection  
for

Pesticides

# PPE

## CA Regulatory Requirements

***Title 8 CCR Section 5192***

***and***

***Title 3 CCR Section 6738***

***Employer shall select and require  
the use of appropriate PPE.***

# PPE

## Program Requirements

Selection based on site (label)

Use and Limitations

Maintenance and Storage

Decon and Disposal

Training/Donning/Doffing

Evaluation of Program

Thermal Considerations



# PPE

## Requirements of PPE

### **Physical Resistance**

*Ability of the PPE to maintain structural integrity under operating conditions.*

### ***Physical Compromises***

*Cuts, tears, punctures, heat, cold, flame, abrasion, shear, stretch, seam penetration, etc.*

# PPE

## Requirements of PPE

### **Physical Resistance Properties**

Durability (material strength)

Flexibility

Temperature Resistance

Structural Integrity



# PPE

## Requirements of PPE

### **Chemical Resistance**

*Ability of the PPE to maintain integrity under chemical exposure.*

### ***Chemical Compromises***

*Degradation (dissolve/corrode)*

*Permeation*

# PPE

## Requirements of PPE

### Chemical Resistance

#### Degradation

*Loss or change in material's chemical resistance and/or physical properties because of exposure to reactive chemicals or environmental conditions*

# PPE

## Requirements of PPE

### Chemical Resistance

#### Permeation

*Transport of the chemical through the material, with or without dissolving the material (molecular penetration).*

*Affected by:*

*contact time/concentration/temperature*

*molecular size/physical state*

# PPE

## ***Glove Category Selection Key Based on USEPA Label Codes***

<b>Label Code</b>	<b>Chemical Class</b>	<b>Recommended By CDPR</b>
<b>A</b>	<b><i>Water and Dry materials</i></b>	<b><i>1,2,3,4,5,6,7,8</i></b>
<b>B</b>	<b><i>Ketones</i></b>	<b><i>1,2</i></b>
<b>C</b>	<b><i>Alcohols</i></b>	<b><i>1,2,3,4,7,8,</i></b>
<b>D</b>	<b><i>Acetates</i></b>	<b><i>1,2</i></b>
<b>E</b>	<b><i>Aliphatic Hydrocarbons</i></b>	<b><i>1,3,4,8</i></b>
<b>F</b>	<b><i>Aromatic Hydrocarbons</i></b>	<b><i>1,2,3,8</i></b>
<b>G</b>	<b><i>Benzenes</i></b>	<b><i>1,8</i></b>
<b>H</b>	<b><i>Halo-hydrocarbons</i></b>	<b><i>1,8</i></b>

***1:Laminate 2:Butyl 3:Nitrile 4:Neoprene 5:Natural  
6:Polyethylene 7:PVC 8:Viton***

***All but Laminate and Polyethylene must be 14 mils or thicker***

# PPE

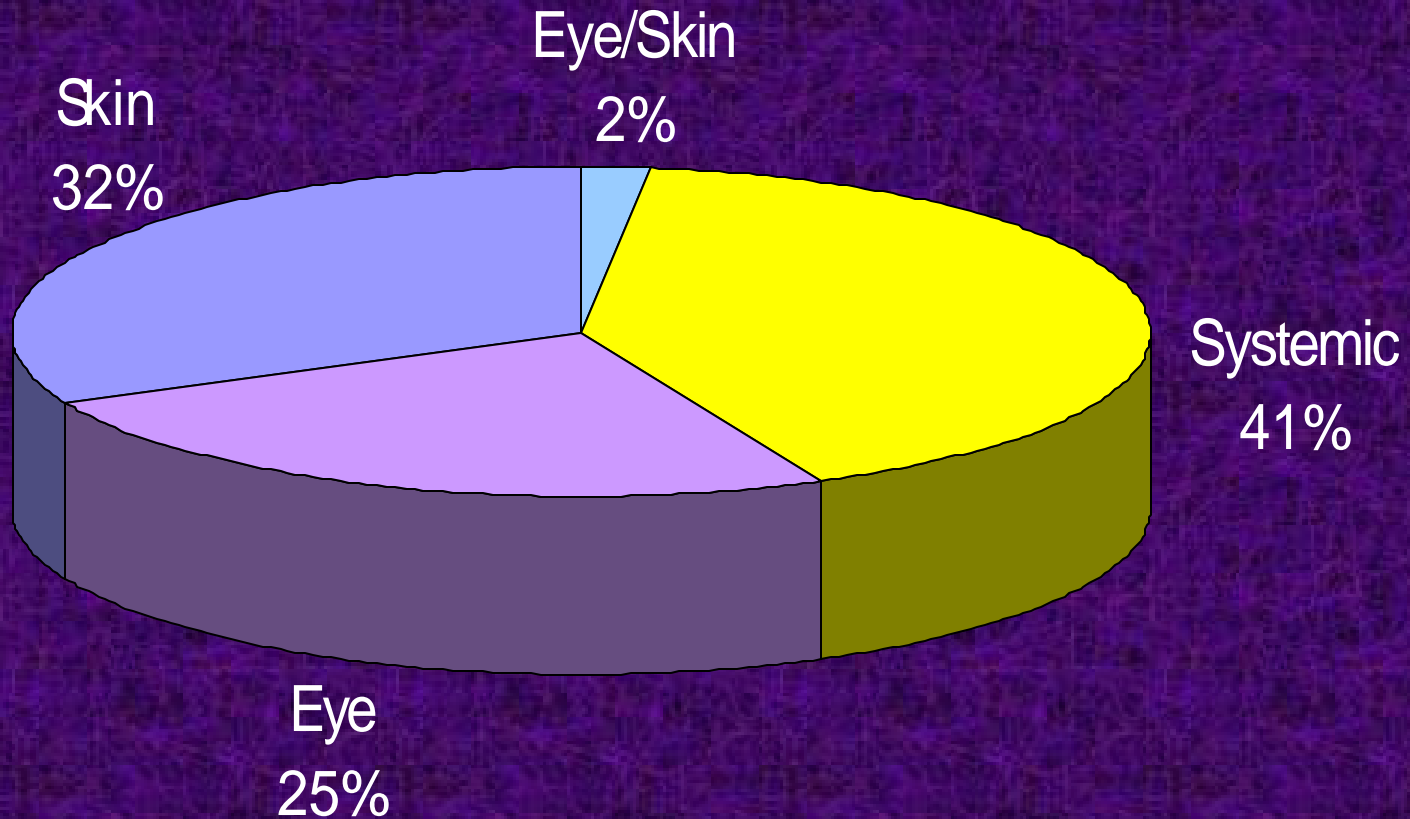
## Selection of PPE

**PPE should protect against multiple hazards.**

**However, PPE selection should match the expected hazard**

# PPE

## Pesticide Illness/Injury, By Type



➤ **96-99 PISP Data**  
**(WH&S)** No NonOcc/Drift/StrucRes

# PPE

## Selection of PPE

### Selection Criteria

*Label*

*MSDS*

*Manufacturer Guidelines*

*Unknowns*



# PPE

## Selection of PPE

### Hazard Assessment

#### *Air Monitoring*

*Potential Air Concentration*

*Potential IDLH/Confined Space?*

#### *Surface Monitoring*

*Environmental Transport?*

# PPE

## Selection of PPE

### *MSDS/Label Review*

- ↖ *chemical/physical hazards*
  - ↖ *routes of exposure*
    - ↖ *reactivity data*
- ↖ *degradation/decomposition*
  - ↖ *compatibility*

# PPE

## Comparison of Protection

### Low Hazard

#### ***HAZMAT***

##### **Level D**

**Coveralls**

**Boots/Shoes**

**Eye Protection**

**Hard Hat**

**Gloves\***

#### ***AGRICULTURAL***

##### **Caution**

**Work Clothing**

**Boots/Shoes**

**Gloves\***

**Eye Protection\***

# PPE

## Comparison of Protection

### Moderate Hazard

#### ***HAZMAT***

##### **Level C**

**CR Clothing**

**CR Boots/Shoes**

**Hard Hat**

**CR Gloves**

**FF Respirator**

#### ***AGRICULTURAL***

##### **Warning**

**Work Clothing**

**Boots/Shoes**

**CR Gloves**

**Respirator**

**Sou'western\***

**Eye Protection\***



# PPE

## Head Protection



Sou'western



RASH  
MAKER



BumpCap

# PPE

## Comparison of Protection

### High Hazard

#### ***HAZMAT***

##### **Level B**

CR Clothing

CR Boots/Shoes

Hard Hat

CR Gloves

SCBA

#### ***AGRICULTURAL***

##### **Danger**

CR/Work Clothing

CR Boots/Shoes

CR Gloves

Respirator

Sou'western/BC

Eye Protection

SCBA for Fumigants

## Irrigator Boot



## Non Chemical Resistant Boot





# PPE

## Comparison of Protection

### Extreme Hazard

***HAZMAT***

***Level A***

**Encapsulating Suit**

**CR Boots/Shoes**

**CR Gloves**

**SCBA**

***AGRICULTURAL***

***Fugedaboutit***





# Workclothing



# Not Workclothing





# PPE

## Problems of PPE Use

***Heat Stress***

***Decreased Mobility***

***Physical Stress***

***Multiple Hazards***

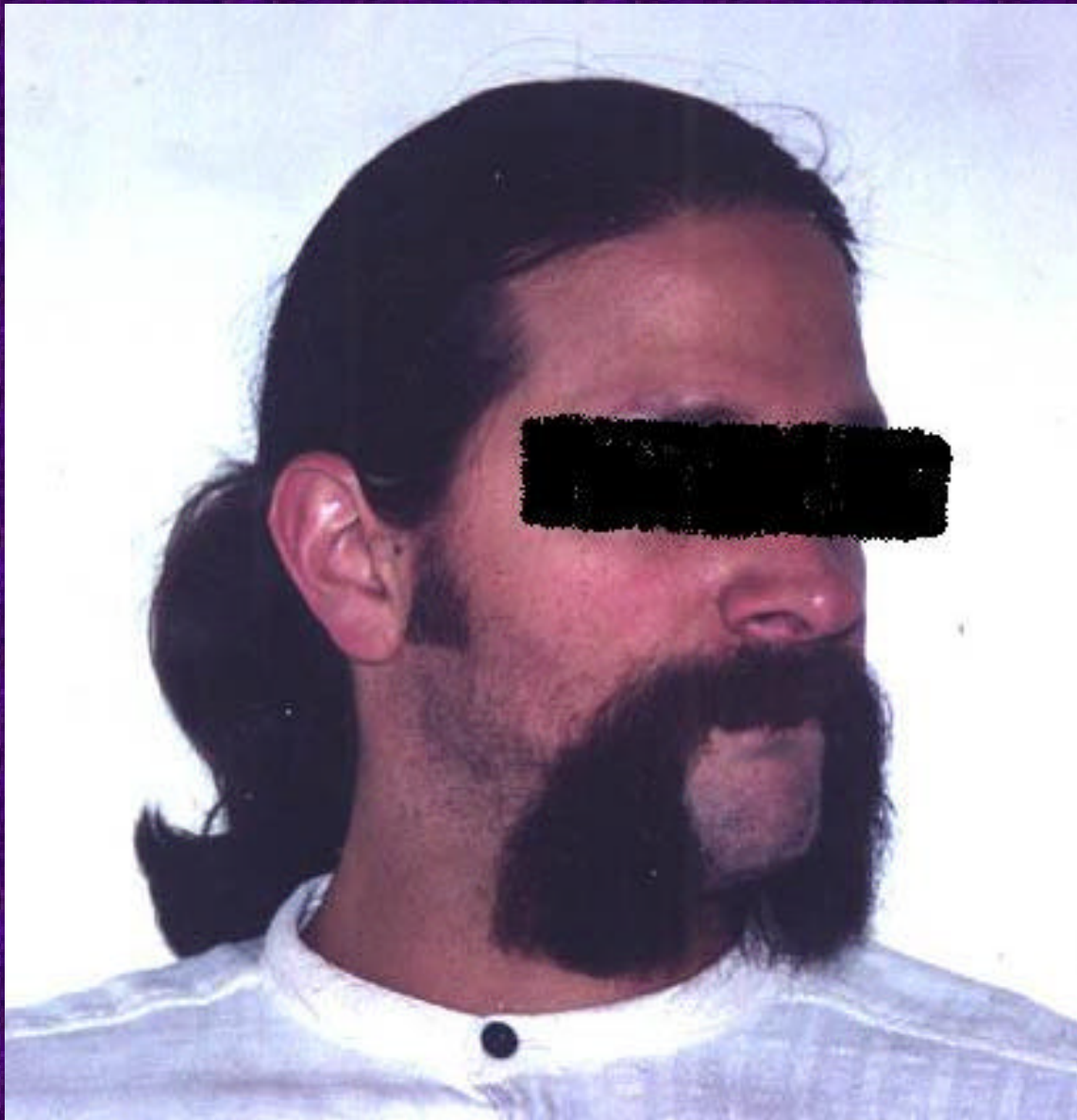
***Lack of Fine Motor Skill***

***False Security***



There is a requirement that the sealing surfaces of the respirators contact only bare skin, no facial hair.

Is he okay?



How  
about  
him?



And  
him?





Sorry  
Colonel,  
but not  
even the  
12 herbs  
and spices  
will help  
here.

# **Respiratory Protection Classes**

***TC-84A Particulate Filter (HF/FF/FFp)***

***TC-23C Chemical Cartridge (HF/FF)***

***TC-14G Gas Masks***

***TC-19C Supplied Airline***

***TC-13F SCBA (IDLH)***

***TC-21C PAPR***

# Respiratory Protection Classes

*TC-84A, TC-23C, TC-21C and TC-14G*

**Filtered Air** (*NO IDLH*)

*TC-19C and TC-13F SCBA*

**Fresh Air** (*IDLH\**)

# Respiratory Protection

## IDLH

### Immediately Dangerous to Life or Health

Maximum environmental concentration of a contaminant for which one could escape within 30 minutes without developing escape-impairing symptoms or irreversible health effects.

Otherwise known as:

I'll Die Laying Here

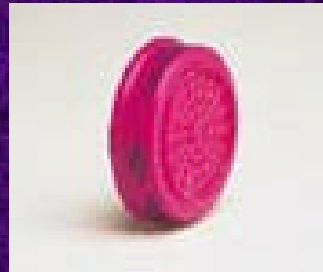


# Respiratory Protection Classes

## TC-

## 84A

Most likely used in agricultural applications



# Respiratory Protection Classes



TC-  
23C



# Respiratory Protection Classes



TC-

1



# Respiratory Protection Classes

## TC-19C



IDLH OK



NO IDLH



# Respiratory Protection Classes



A must  
have for  
fumigants.



TC-  
125



# Respiratory Protection Selection Criteria

Nature of hazard (solid/liquid/gas/IDLH/caustic/etc.)

Location of hazardous area (confined/unstable/outdoor/etc.)

Duration of use (quick look vs. long haul)

Characteristics of operation (creating a respiratory hazard?)

Limitations of respirator (warning properties no longer cut it)

***Ultimate Concern***

**IS THE WORKER PROTECTED?**

# Respiratory Protection Program Requirements/SOP

**Administrator** (who gets to twist in the wind)

**Selection** (don't send a TC-84A to do a TC-23C's work)

**Training** (Scuba vs SCBA donning)

**Fit Testing** (QLA: Saccharine/Bitrix/IAA/Brimstone; or QNT)

# Respiratory Protection Program Requirements/SOP

**Maintenance** (there is no NIOSH approved duct tape)

**Cleaning and Sanitation** (sorry about the chaw stains)

**Medical Clearance** (it's not just perforated eardrums)

**Program Evaluation** (anyone dead yet?)



# **Additional Information**

**Recognition and Management of Pesticide Poisonings, 5<sup>th</sup> Ed. (USEPA Doc# 735-R98-003)**

**Farm Chemicals Handbook, Meister Publishing Co.**

**800-572-7740**

**Occupational Safety and Health guidance Manual for Hazardous Waste Site Activities (NIOSH Doc# 85-115)**

**The Worker Protection Standard for Agricultural Pesticides-How To Comply (USEPA Doc#735-B-93-004)**

# Additional Information

**Agrochemical and Pesticide Safety Handbook;  
Waxman, CRC Press LLC (ISBN#1-56670-296-8)**

**Illustrated Handbook of Physical-Chemical  
Properties and Environmental Fate for Organic  
Chemicals, Vol. 5, Pesticides; Mackay et al., Lewis  
Publishers (ISBN# 1-56670-255-0)**

**Handbook of Environmental Fate and Exposure  
Data for Organic Chemicals, Vol. 3, Pesticides;  
Howard, Lewis Publishers (ISBN#0-87371-328-1)**

**The Safe and Effective Use of Pesticides; UC  
Davis State IPM, Publication 3324 (ISBN#1-879906-  
43-0)**

# Words of Wisdom

“ An expert is somebody who is more than 50 miles from home, has no responsibility for implementing the advice he gives, and shows slides.” --Edwin Meese



**Off to the next  
class on proper  
ladder  
placement?**

**Nope, one more section on bug-spray, but  
take a 15 minute break.**

